

Claims

This listing of claims will replace all prior versions and listings of claims in the application.

1-16. (Cancelled)

17. (Currently Amended) A process for curing a photopolymer to form a photopolymer plate having a plate thickness, a top side and a bottom side, a base relief on said top side of the plate having a base relief thickness, and a printing relief on said top side having a printing relief thickness, said base relief thickness and said printing relief thickness each extending within said plate thickness, comprising the steps of:

forming said plate, base relief and printing relief by exposing the photopolymer to radiation from only said bottom side of said plate, and

modulating the radiation applied to said photopolymer to control the thickness of said base relief and said printing relief.

18. (Previously Presented) A process according to claim 17, wherein the step of exposing said photopolymer to radiation includes simultaneously forming said base relief and said printing relief.

19. (Currently Amended) A process according to claim 17, wherein the step of modulating the radiation includes { positioning a radiation modulation device between a source of the radiation and said photopolymer and } applying first and second levels of radiation to said photopolymer, said first level ~~or intensity~~ of radiation curing the printing relief and being greater than said second level ~~or intensity~~ of radiation curing said base relief, said first and second radiation levels ~~or intensities~~ being determined by a digital device or an analogical film device, said modulation device pre-establishing one or more transparent ~~or white~~ areas for determining said first level ~~or intensity~~ of radiation and one or more areas with a percentile or half tone of gray for determining said second level ~~or intensity~~ of radiation.

20. (Previously Presented) A process according to claim 19, wherein the radiation exposure time for curing the printed relief and the radiation exposure time for curing the base relief are equal.

21. (Previously Presented) A stereographic process wherein a photopolymer having a substantial thickness, a top face and a bottom face, is cured by emission of radiation through the bottom face only, said radiation being modulated by a radiation modulation device, the radiation applied and regulated through said radiation modulating device being configured to provide different and simultaneous levels of radiation according to a predetermined pattern, said levels of radiation varying according to a percentile of gray defined for the radiation modulation device, the process comprising the steps of:

defining gray halftone areas in the radiation modulation device;

defining transparent areas in the radiation modulation device; and

radiating said photopolymer plate through said radiation modulation device having said gray halftone areas and transparent areas to simultaneously form a relief base at said bottom surface and a printing relief at said top surface;

said step of radiating said photopolymer plate including applying radiation through said gray halftone areas to reduce the level of radiation to said bottom face of said photopolymer plate to form and catalyze said relief base, and simultaneously applying radiation through said transparent areas to increase the level of radiation to said top face of said photopolymer plate to form and catalyze a printing relief having a high relief third dimension at the top face.

22. (Previously Presented) A process according to claim 21, wherein said photopolymer is a photopolymer plate.

23. (Previously Presented) A process according to claim 21, wherein said photopolymer is a liquid photopolymer placed in a suitable receptacle, said receptacle having a transparent bottom.

24. (Currently Amended) A process according to claim 21, wherein the radiation level determined by said transparent areas of the radiation modulation device ~~vary~~ varies from the

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border of the transparent areas to a desirable border of the gray halftone areas in order to form an angular wall between said relief base and said printing relief thereby eliminating both the dot gain and dot droop on the resultant plate.

25. (New) A process for making a flexographic printing plate comprising;

providing a photopolymer having a thickness, a top surface and a bottom surface;

positioning a radiation modulation device between a source of radiation and said bottom surface of said photopolymer, said radiation modulation device including at least one predetermined area which is substantially transparent to said source of radiation and at least one predetermined area which allows the passage of only a portion of the radiation from said radiation source;

exposing said photopolymer to radiation from said radiation source through said radiation modulation device for a time sufficient to cause said photopolymer to polymerize and simultaneously form a base relief thickness and a printing relief thickness in said photopolymer, said printing relief thickness being greater than said base relief thickness; and

removing uncured portions of said photopolymer to form a flexographic printing plate.